UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,370	09/17/2001	Patrick L. Connor	42390.P12273	8351

7590 03/22/2005	**EXAMINER**

Lance A. Termes
BLAKELY, SOKOLOF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

	EXAMINER
	HUYNH, KIM T

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 December 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-34</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-34</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>17 September 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Receipt Acknowledgement

1.   Receipt is acknowledged of the request filed on 21st of December 2004 for a

request for continued examination (RCE) under 37 CFR 1.114 based on the application

No. 09/461,643, which the request is acceptable and an RCE has been established.

Claims 1, 22, 25 and 30 have been amended. Currently, claims 1-34 are pending in this

application.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Edholm

(Pub No US20030067940)

As per claim 1, Edholm discloses A method, comprising:

- monitoring a level of a packet queue of a protocol stack at a machine(fig.2,

    204 ie client computer); and [0030]

- disabling a normal incoming packet procedure in response to the level of
  the packet queue satisfying an entry condition(ie not exceeded release to
  driver implies disabling [0030]) and enabling an alternate incoming packet
  procedure, the alternate incoming packet procedure including indicating
  new packets if any, to the protocol stack at an indication rate in response
  to a packet processing rate and altering the indication rate in response to
  the level of the packet queue satisfying one or more secondary conditions,
  if any. [0026-0032], figure 6., ie exceeded wait before placing packets to
  the queue implies enabling. The controller 332 determine new packets
  have been received and determine transmission of the packet to a
  destination port will cause a transmission rate to exceed.)

As per claim 2, Edholm discloses the method further comprising, disabling the
alternate incoming packet procedure and enabling the normal incoming packet
procedure in response to the level of the packet queue satisfying an exit
condition. [0029-0030]

As per claim 3, Edholm discloses wherein the normal incoming packet procedure
includes generation of receive interrupts and automatic packet indication. [0034]

As per claim 4, Edholm discloses wherein the normal incoming packet
procedure includes a polling technique. Figure 6, counter implies polling

As per claim 5, Edholm discloses wherein the level of the packet queue satisfying
the entry condition comprises the level of the packet queue exceeding an initial
threshold value. [0030]

As per claim 6, Edholm discloses wherein the indication rate comprises a rate equal to or less than a packet processing rate. [0030], figure 6

As per claim 7, Edholm discloses wherein the level of the packet queue satisfying the exit condition comprises the level of the packet queue falling below an exit threshold value. [0030]

As per claim 8, Edholm discloses wherein the level of the packet queue satisfying the entry condition comprises the level of the packet queue exceeding an initial threshold value, and the level of the packet queue satisfying the exit condition comprises the level of the packet queue falling below an exit threshold value. [0030]

As per claim 9, Edholm discloses wherein the indication rate comprises a rate greater than a packet processing rate, and altering the indication rate in response to the level of the packet queue satisfying one or more secondary conditions comprises reducing the indication rate in response to the level of the packet queue exceeding a limiting threshold value. [0029-0030]

As per claim 10, Edholm discloses wherein reducing the indication rate comprises reducing the indication rate to a rate equal to or less than the packet processing rate. [0030]

As per claim 11, Edholm discloses wherein altering the indication rate in response to the level of the packet queue satisfying one or more secondary conditions further comprises increasing the indication rate in response to the level of the packet queue falling below a nonlimiting threshold value. [0030]

As per claim 12, Edholm discloses wherein increasing the indication rate comprises increasing the indication rate to a rate greater than the packet processing rate. [0030]

As per claim 13, Edholm discloses wherein the level of the packet queue corresponds to a number of outstanding packets. [0030]

As per claim 14, Edholm discloses wherein the level of the packet queue corresponds to a number of receive packet buffers. [0030]

As per claim 15, Edholm discloses wherein monitoring the level of the packet queue of the protocol stack comprises:

- identifying a number of packets indicated to the protocol stack; [0030]

- identifying a number of packets processed by the protocol stack; and

- calculating a difference between the number of packets indicated to the protocol stack and the number of packets processed by the protocol stack, wherein the difference comprises a value corresponding to the level of the packet queue of the protocol stack. [0029-30], figure 6, counter)

As per claim 16, Edholm discloses wherein monitoring the level of the packet queue of the protocol stack comprises:

- identifying an initialization number of receive packet buffers; [0030]

- identifying a number of available receive packet buffers in host memory; [0030] and

- calculating a difference between the initialization number of receive packet buffers and the number of available receive packet buffers in host

memory, wherein the difference comprises a value corresponding to the

level of the packet queue of the protocol stack. [0029-0030]

As per claim 17, Edholm discloses wherein the initial threshold value

corresponds to a number of receive packet buffers, the number of receive packet

buffers equal to a percentage of an initialization number of receive packet

buffers. [0030]

As per claim 18, Edholm discloses wherein the initial threshold value

corresponds to a number of outstanding packets. [0030]

As per claim 19, Edholm discloses wherein the exit threshold value is less than

or equal to the initial threshold value. [0030]

As per claim 20, Edholm discloses wherein the packet processing rate

comprises a rate at which receive packet buffers are returned to a device driver

from the protocol stack. [0030]

As per claim 21, Edholm discloses wherein the packet processing rate

comprises a rate at which packets are processed by the protocol stack. [0030]

As per claim 22, Edholm discloses a method, comprising:

- monitoring a level of a packet queue of a protocol stack at a computer

  (fig.2, 204 ie client computer), wherein the level of the packet queue

  corresponds to outstanding packets(ie packets release implies

  outstanding packets) that have been received at the computer and are

  awaiting processing; and [0030]

- in response to the level of the packet queue exceeding an initial threshold

  value, disabling generation of receive interrupts at the computer, disabling

  automatic packet indication, identifying new packets received at the

  computer, if any, and indicating new packets at the computer, if any, to the

  protocol stack at an indication rate equal to or less than a packet

  processing rate of the protocol stack; and [0030-0032]

- in response to a decrease in the level of the packet queue below an exit

  threshold value, enabling the generation of receive interrupts at the

  computer, and enabling the automatic packet indication at the computer.

  [0030-0032]

As per claim 23, Edholm discloses wherein the initial threshold value

corresponds to a number of outstanding packets. [0030]

As per claim 24, Edholm discloses wherein the exit threshold value is less than

or equal to the initial threshold value. [0030]

As per claims 25, 30, Edholm discloses an apparatus, comprising:

- a processor; [0039]

- a memory, coupled to the processor, to store a plurality of machine

  instructions including a protocol stack and a device driver; and [0030]

- a communications interface (fig.1, 104), coupled to the processor, and

  capable of being connected to a network to receive packets from the

  network(fig.2, 208);

- wherein execution of the machine instructions by the processor cause the
  apparatus to monitor a level of a packet queue of the protocol stack, and
  to disable a normal incoming packet procedure at the apparatus
  associated with the communications interface and the device driver in
  response to the level of the packet queue satisfying an entry condition and
  enable an alternate incoming packet procedure at the apparatus
  associated with the communications interface and the device driver, the
  alternate incoming packet procedure including the device driver indicating
  new packets received at the communications interface, if any, to the
  protocol stack at an indication rate in response to a packet processing rate
  and altering the indication rate of the protocol stack in response to the
  level of the packet queue satisfying one or more secondary conditions, if
  any. [0026-0032]

As per claims 26, 31, Edholm discloses wherein execution of the machine

instructions by the processor further cause the apparatus to disable the alternate

incoming packet procedure and enable the normal incoming packet procedure in

response to the level of the packet queue satisfying an exit condition. [0030]

As per claims 27, 32, Edholm discloses wherein the level of the packet queue

satisfying the entry condition comprises the level of the packet queue exceeding

an initial threshold value, the indication rate comprises a rate equal to or less

than the packet processing rate, and the level of the packet queue satisfying the

exit condition comprises the level of the packet queue falling below an exit

threshold value. [0030], figure 6.

As per claims 28, 33, Edholm discloses wherein the indication rate comprises a

rate greater than a packet processing rate, and altering the indication rate in

response to the level of the packet queue satisfying one or more secondary

conditions comprises reducing the indication rate in response to the level of the

packet queue exceeding a limiting threshold value. [0030]

As per claims 29, 34, Edholm discloses wherein altering the indication rate in

response to the level of the packet queue satisfying one or more secondary

conditions further comprises increasing the indication rate in response to the

level of the packet queue falling below a nonlimiting threshold value. [0030]

Response to Amendment

4.   Applicant's amendment filed on 12/21/04 have been fully considered but does not

place the application in condition for allowance.

a. In response to applicant's argument that Edholm is directed to end node

pacing. In Hdholm, the transmit queue located at the transmitting device is associated

with the rate packets are received at the receiving device. However, Edholm does not

disclose changing incoming packet procedures of a device based at least in part on a

packet queue of the same device. Thus Edholm fails to disclose "monitoring a level of a

packet queue of a protocol stack at a machine; and disabling a normal incoming packet

procedure at the machine in response to the level of the packet queue satisfying an

entry condition and enabling an alternate incoming packet procedure at the machine".

Examiner respectfully disagrees. As Edholm notes at [0026-0032], discloses system

200 to pace data transferred between an end node (ie client computer 204) and network

208. The control application 216 of client computer 204 monitors a bandwidth for data

transfer between network 208 and client computer 204.(this is equivalent to monitoring

a level of a packet queue of protocol at a machine as applicant's claimed) thus

transferring data from network 208 to computer 204 is not the same device as applicant

argued. Furthermore, the control application 216 determines that the bandwidth

limitations of the transmission rate not been exceeded, the control releases the pointer

to the driver(this is equivalent to disabling a normal incoming packet procedure at the

machine as applicant claimed). And if the control application 216 included in client

computer 204 is determined the bandwidth limitations of the transmission rate is

exceeded wait before placing packets to the queue(this is equivalent to enabling an

alternate incoming packet procedure at the machine(ie client computer 204). The

controller 216 is determines new packets have been received and determine

transmission of the packet to a destination port will cause a transmission rate to exceed.

Thus, the prior art teaches the invention as claimed and the amended claims do not

distinguish over the prior art as applied.

Conclusion

5.   *Any inquiry concerning this communication or earlier communications from the examiner should*

be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to

[kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9.00AM- 6:00PM. If attempts to

reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be

reached at (571)272-3632 or via e-mail addressed to [mark.Rinehart@uspto.gov].

The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

Kim Huynh

March 17, 2005

TIM VO
PRIMARY EXAMINER